REMARKS

Present Status of the Application

The Office Action rejected all presently-pending claims 1-28. Specifically, the Office Action rejected claims 1-22 and 26-28 under 35 U.S.C. 102(e), as being anticipated by Nakajima (US 6,897,570). The Office Action also rejected claims 23-25 under 35 U.S.C. 103(a) as being unpatentable over Nakajima (US 6,897,570) in view of Lei (U.S. 2004/0166661).

Applicants have amended claims 1, 5-6, 10, 14-15 and 21 and canceled claims 2-4, 11-13, 22, 24-25 and 27-28 to more clearly define the present invention. After entry of the foregoing amendments, claims 1, 5-10, 14-21, 23 and 26 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Office Action Rejections

Applicants respectfully traverse the 102(e) rejection of claims 1, 5-10, 14-21 and 26 because Nakajima (US 6,897,570) does not teach every element recited in these claims.

In order to properly anticipate Applicants' claimed invention under 35 U.S.C 102, each and every element of claim in issue must be found, "either expressly or inherently described, in a single prior art reference". "The identical invention must be shown in as complete details as is contained in the .... claim. Richardson v. Suzuki Motor Co., 868 F. 2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See M.P.E.P. 2131, 8th ed., 2001.

The present invention is in general related to a bonding pad and a chip structure as claims 1, 10 and 21 recite:

Claim 1. A bonding pad for disposing on a chip, comprising:
a body having a first surface and a corresponding second surface and having a central region and corner regions, wherein the body is disposed on the chip, and the second surface of the body is in contact with the chip;
a plurality of first protruding portions disposed on the first surface at the corner regions of the body; and
a second protruding portion disposed on the first surface in the central region of the body, wherein ***each of the first protruding portions extends to the central region from the corner region to connect to the second protruding portion.***

Claim 10. A chip structure, comprising:
a chip having an active surface;
at least one bonding pad disposed on the active surface of the chip, the bonding pad including:
a body having a first surface and a corresponding second surface and having a central region and corner regions, wherein the body is disposed on the chip, and the second surface of the body is in contact with the chip;
a plurality of first protruding portions disposed on the first surface at the corner regions of the body; and
a second protruding portion disposed on the first surface in the central region of the body, ***wherein each of the first protruding portions extends to the central region from the corner region to connect to the second protruding portion.***

Claim 21. A pad for disposing on a chip, comprising:
a body having a central region and corner regions;
a plurality of first protruding portions disposed on the corner regions of the body; and
a second protruding portion disposed on the central region of the body, ***wherein each of the first protruding portions extends to the central region from the corner region to connect to the second protruding portion.***

Nakajima fails to disclose, teach or suggest that each of the first protruding portions extends to the central region from the corner region to connect to the second protruding portion. Nakajima discloses a device including a chip 100 and bonding pads 36P formed on the chip 100. In particular, because the plugs 34D have protrusions 37, the layer 36 has a surface formed with salients conformal to the height of the protruding plugs 34D (col. 7, lines 30-32). Thus, ***the bonding pad 36P is formed with a larger number of protrusions 36c provided by the protruding plugs in lattice.*** However, in claims 1, 10 and 21, the first protruding portions are disposed on the corner regions of the body while the second protruding portion is disposed on the central region. In particular, ***each of the first protruding portions extends to the central region from the corner region to connect to the second protruding portion.*** The protrusions 36c disclosed by Nakajima are arranged in lattice but do not extend to the central region from the corner region.

Therefore, Nakajima does not teach every element recited in claims 1, 10 and 21. For at least the foregoing reasons, Applicants respectfully submit that independent claims 1, 10 and 21 patently define over the prior art reference, and should be allowed. For at least the same reasons, dependent claims 5-9, 14-20 patently define over the prior art as well.

In addition, the present invention also provides a device as claim 26 recites:

Claim 26. A device ***comprising the pad of claim 21.***

As discussed as above, claim 21 patently defines over the prior art reference and should be allowed. For at least the same reasons, claim 26 patently defines over the prior art because claim 26 contains all features of claim 21.

Applicants respectfully traverse the rejection of claim 23 under 103(a) as being unpatentable over Nakajima (US 6,897,570) in view of Lei (U.S. 2004/0166661) because a prima facie case of obviousness has not been established by the Office Action.

To establish a prima facie case of obviousness under 35 U.S.C. 103(a), each of three requirements must be met. First, the reference or references, taken alone or combined, must teach or suggest each and every element in the claims. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to combine the references in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of the three requirements must " be found in the prior art, and not be based on applicant's disclosure." See M.P.E.P. 2143, 8th ed., February 2003.

The present invention also provides a display apparatus as claim 23 recites:

> Claim 23. A display apparatus comprising a device ***which includes the pad of claim 21***.

As discussed as above, Nakajima fails to disclose, teach or suggest that each of the first protruding portions extends to the central region from the corner region to connect to the second

protruding portion. Thus, claim 21 patently defines over the prior art reference and should be allowed. In addition, Lei also fails to disclose, teach or suggest that each of the first protruding portions extends to the central region from the corner region to connect to the second protruding portion. Therefore, the two references (Nakajima and Lei) combined do not suggest each and every element in claim 21.

For at least the foregoing reasons, claim 21 patently defines over the two prior art references and should be allowed. For at least the same reasons, claim 23 patently defines over the prior art because claim 23 contains all features of claim 21.

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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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